Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Granular sub Base
Contractor	:	Sri.H.S.Prakesh
Test Method	:	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Venkatala Village
Material	:	40mm Coarse Aggregates
Sample No	:	1
Tested Date	:	8-Jul-2020

Weight of Sample: 4000 gms

A.E.E

Aggregate Gradation Test

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	75	0	0	0.00	100	100	Gradation satisfies the MORT&H Specification for GSB
2	53	358	8.95	8.95	91.05	80-100	
3	26.5	740	18.50	27.45	72.55	55-90	
4	9.5	941	23.53	50.98	49.02	35-65	
5	4.75	458	11.45	62.43	37.57	25-55	
6	2.36	410	10.25	72.68	27.32	20-40	
7	0.425	782	19.55	92.23	7.77	10-15	
8	0.075	215	5.38	97.61	2.39	<5	

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Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road & Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Granular sub Base
Contractor	:	Sri.H.S.Prakesh
Test Method	:	Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Venkatala Village
Material	:	40mm Coarse Aggregates
Sample No	:	1
Date	:	8-Jul-2020

Liquid and Plastic Limit by Cone Apparatus

Sl No	Description	Unit	Liquid Limit	Plastic Limit
	Penetration	mm		
1	Container No	no		
2	Weight of container,(A)	gm		
3	Weight of container + wet soil, (B)	gm		
4	Weight of container + dry soil, (C)	gm	Non Plastic	Non Plastic
5	Weight of water, D=(B - C)	gm		
6	Weight of dry soil, E=(C - A)	gm		
7	Water Content, D/E x 100 (%)	gm		

Comments: <6 so Non Plastic

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Job No: QECD/BBMP/YNK/QC-15/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Granular sub Base
Contractor	:	Sri.H.S.Prakesh
Test Method	:	IS: 2720 (Part - 16) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Venkatala Village
Material	:	40mm Coarse Aggregates
Sample No	:	1
Date	:	10-Jul-2020

A.E.E

Field Density Test by Sand Replacement Method

MDD	2.24
OMC in %	3.20
Bulk Density Ys	1.39
Weight of Sand In cone W1 (gm)	1195.00
Weight Of Wet soil From Hole (W2)	4158.00
Wt Of Sand +Cylinder Before Pouring (W3)gm	17000.00
Wt Of Sand +Cylinder After Pouring (W4) gm	13180.00
Wt Of Sand In Hole: W5 = W3 - W4- W1 (gm)	2625.00
Volume of Hole: V= W5/ Ys	1885.78
Bulk Density Yb= W2/V (gm/cc)	2.20
Moisture Meter Reading (%)	1.55
Moisture Content : w (From Graph In %)	3.28
Dry Density Yd = Yb/(1+W/100)	2.13
Field Compaction(%)	95.31

For Qualiex Civil Design & Consultancy

Job No: QECD/BBMP/YNK/QC-15/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Wet Mix Macadam
Contractor	:	Sri.H.S.Prakesh
Location	:	Venkatala Village
Material	:	Bitumen
Sample No	:	2
Date	:	16-Jul-2020

A.E.E

Rate of Spread of Prime Coat

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)		0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	m^2	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.68	1.684	1.674
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.039	0.043	0.033
6	Rate of spread (d/a)	kg	0.975	1.075	0.825
7	Average	kg / m^2		0.958	
8	Specified Limit	kg / m^2		Not less than 0.6 kg / m^2	

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.958 kg / m2

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ob No: QECD/BBMP/YNK/QC-15/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Wet Mix Macadam
Contractor	:	Sri.H.S.Prakesh
Test Method	:	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Venkatala Village
Material	:	Coarse Aggregates
Sample No	:	1
Date	:	15-Jul-2020

Aggregate Particle Shape

I.S. Sieves Size			Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)	Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63.00	50.00	0.00	33.90	0.00	-	0.00
50.00	40.00	0.00	27.00	0.00	81.00	0.00
40.00	25.00	28.00	19.50	0.00	58.50	0.00
31.50	25.00	32.00	16.95	0.00	-	0.00
25.00	20.00	1562.00	13.50	242.00	40.50	260.00
20.00	16.00	1486.00	10.80	165.00	32.40	192.00
16.00	12.50	952.00	8.55	147.00	25.60	154.00
12.50	10.00	496.00	6.75	98.00	20.20	104.00
10.00	6.30	215.00	4.89	37.00	14.70	44.00
	SW	4771	SWf	689	SWe	754

A.E.E

Flakiness Index 14.44 %

Elongation Index 15.80 %

Combined Flakiness and Elongation Indices : 30.25 %

Comments: Maximum allowable Combined Flakiness and Elongation Indices for WMM is 35%

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GSTIN: 29AYHPN8663P1ZA

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Project Management Services

Job No: QECD/BBMP/YNK/QC-15/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Wet Mix Macadam
Contractor	:	Sri.H.S.Prakesh
Test Method	:	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Venkatala Village
Material	:	Coarse Aggregates
Sample No	:	1
Date	:	16-Jul-2020

Weight of Sample: 4000 gms

Aggregate Gradation

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained	Cumulative % of Passing		
					Test Result	Gradation Limits as per MORT&H	Remarks
1	53	0.00	0.00	0.00	100.00	100	
2	45	106.00	2.65	2.65	97.35	95-100	Gradation satisfies the MORT&H Specification for Wet Mix macadam
3	22.4	1135.00	28.38	31.03	68.97	60-80	
4	11.2	894.00	22.35	53.38	46.62	40-60	
5	4.75	765.00	19.13	72.51	27.49	25-40	
6	2.36	452.00	11.30	83.81	16.19	15-30	
	0.06	265.00	6.63	90.44	9.56	(8-22)	
	0.075	261.00	6.53	96.97	3.03	0-5	

A.E.E

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QUALIEX CIVIL DESIGN & CONSULTANCY
Project Management Services

Job No: QECD/BBMP/YNK/QC-15/2019-2020/01

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Wet Mix Macadam
Contractor	:	Sri.H.S.Prakesh
Test Method	:	IS: 2720 (Part - 16) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Venkatala Village
Material	:	Wet Mix Macadam
Sample No	:	1
Date	:	16-Jul-2020

A.E.E

Field Density Test by Sand Replacement Method

MDD	2.24
OMC in %	3.20
Bulk Density Ys	1.39
Weight of Sand In cone W1 (gm)	1195.00
Weight Of Wet soil From Hole (W2)	4261.00
Wt Of Sand +Cylinder Before Pouring (W3)gm	17000.00
Wt Of Sand +Cylinder After Pouring (W4) gm	13154.00
Wt Of Sand In Hole: W5 = W3 - W4- W1 (gm)	2651.00
Volume of Hole: V= W5/ Ys	1904.45
Bulk Density Yb= W2/V (gm/cc)	2.24
Moisture Meter Reading (%)	1.54
Moisture Content : w (From Graph In %)	3.26
Dry Density Yd = Yb/(1+W/100)	2.17
Field Compaction(%)	96.73

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Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri.H.S.Prakesh
Test Method	IS : 73 – 1992 & Specification for Road & Bridge Works, MORT&H, Revision IV.
Grade of Bitumen	60 / 70
Location	Hot Mix Plant
Material	Bitumen
Sample No	1
Date	17-Jul-2020

Quality of Bitumen

Sl. No.	Description	Test Results	Requirement as per IS:73 - 1992
1	Penetration at 25^{0}C , 1 / 10 mm	64	60 – 70
2	Softening Point, (^{0}C)	48	45 – 55
3	Specific Gravity	1.1	Min. 0.97
4	Ductility at 27^{0}C, in cm	78	Min. 75
	Flash Point, (^{0}C)	181	Min. 175

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Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri.H.S.Prakesh
Test Method	IS : 2386 (Part - 4) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Venkatala Village
Material	Coarse Aggregate
Sample No	1
Date	21-Jul-2020

Aggregate Impact Value

Sl. No.	Determination	Unit	Trails	
1	Weight of empty cylinder, w1	gm	960	960
2	Weight of container filled with Aggregate, w2	gm	1305	1310
3	Weight of the Aggregate before compaction, (w2 - w1) = w3	gm	345	350
4	Weight of the sample passing through 2.36 mm IS sieves after Impact, w4	gm	82	78
5	Weight of the sample retained on 2.36 mm IS sieve after Impact, w5	gm	263	261
	Aggregate Impact Value (w4 / w3)x100	%	23.77	22.29
	Specified Limit	%	23.03	

Results: Average Aggregate Impact Value: **23.03** %

AE-1 6 7

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Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri.H.S.Prakesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	21-Jul-2020

Aggregate Particle Shape

I.S. Sieves Size			Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)	Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63	50	0	33.9	0	-	0
50	40	0	27	0	81	0
40	25	0	19.5	0	58.5	0
31.5	25	0	16.95	0	-	0
25	20	1556	13.5	236	40.5	254
20	16	1442	10.8	121	32.4	148
16	12.5	952	8.55	147	25.6	154
12.5	10	468	6.75	70	20.2	76
10	6.3	230	4.89	52	14.7	59
	SW	4648	SWf	626	SWe	691

Flakiness Index 13.47 %

Elongation Index 14.87 %

Combined Flakiness and Elongation Indices : 28.33 %

Comments: Maximum allowable Combined Flakiness and Elongation Indices for DBM is 35%.

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GSTIN: 29AYHPN8663P1ZA

QUALIEX CIVIL DESIGN & CONSULTANCY

Project Management Services

Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri.H.S.Prakesh
Test Method	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Hot Mix Plant
Material	Coarse Aggregates / Bitumen
Sample No	1
Date	17-Jul-2020
Type of Aggregate	Coarse Aggregate
Type of Binder	60 / 70 Grade
Percentage of Binder Used	5% by weight
Total weight of Aggregate	200 gms
Total weight of Binder	10 gms
Temperature of water bath	40^0C

Aggregate Stripping Value

Observation Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.25	3.29	96.71
2	3.31		
3	3.30		

AE/

Comments: Minimum allowable Aggregate Stripping Value for Dense Bituminous Macadam is 95%

A.E.E

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Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name : Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.

Client : The Asst Executive Engineer, Yelahanka Sub Division

Mix Type : Dense Graded Bituminous Macadam

Contractor : Sri.H.S.Prakesh

Test Method : IS: 2386 (Part - III) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.

Location : Hot Mix Plant

Material : Coarse Aggregates

Sample No : 1

Date : 17-Jul-2020

Specific Gravity and Water Absorption

Sl. No.	Particulars	Computations	Test Numbers		
			Test 1	Test 2	Mean
1	Weight of Empty Basket Immersed in Water	W_1 g	761	763	
2	Wt of Basket Filled with Aggregates Immersed in water	W_2g	2032	2025	
3	Weight of Saturated Aggregate in water	W_3g = W_2-W_1	1271	1262	
4	Weight of saturated surface dry aggregate in Air	W_3 g	2067	2050	
5	Weight of water equal to the Volume of the Aggregate	W_3- W_4	796	788	
6	Weight of Oven dried Aggregate	W_4g	2028	2021	
7	Specific Gravity	W_4/(W_3- W_5)	2.55	2.56	2.56
8	Apparent Specific Gravity	W_4/(W_4- W_5)	2.68	2.66	2.67
9	Water Absorption	(W_4- W_5)*100/ W_4	1.92	1.43	1.68

AE-1

Comments: Maximum allowable Aggregate Water Absorption value for Dense bituminous Macadam is 2.0%.

A.E.E

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QUALIEX CIVIL DESIGN & CONSULTANCY

Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	:	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	:	Dense Graded Bituminous Macadam
Contractor	:	Sri.H.S.Prakesh
Test Method	:	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	:	Hot Mix Plant
Material	:	Coarse Aggregates
Sample No	:	1
Date	:	22-Jul-2020

Weight of Sample: 4000 gms

Aggregate Gradation

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.5	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Specification for Dense graded biyuminous macadam
2	26.5	185	4.63	4.63	95.38	90-100	
3	19	869	21.73	26.35	73.65	71-95	
4	13.2	735	18.38	44.73	55.28	56-80	
5	4.75	684	17.10	61.83	38.18	38-54	
6	2.36	361	9.03	70.85	29.15	28-42	
7	0.3	768	19.20	90.05	9.95	(7-21)	
8	0.075	265	6.63	96.68	3.32	(2-8)	

A.E.E

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QUALIEX CIVIL DESIGN & CONSULTANCY

Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report

Project Name : Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.

Client : The Asst Executive Engineer, Yelahanka Sub Division

Mix Type : Dense Graded Bituminous Macadam

Contractor : Sri.H.S.Prakesh

Test Method : Specification for Road & Bridge Works, MORT&H, Revision V.

Location : Venkatala Village

Sample No : 1

Date : 22-Jul-2020

Stability of Mix

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.4	9 KN (min)
2	Marshal Flow	mm	3.45	2 – 5 mm
3	Percent of Air Voids in mix	%	3.58	3-5..
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	71.5	65 – 75 %
5	Density	g/cc	2.22	2.22 g/cc

A.E.E

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Job No: QECD/BBMP/YNK/QC-19/2020-21

Test Report
Binder Content and Mix Gradation

Project Name : Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.

Client : The Asst Executive Engineer, Yelahanka Sub Division

Mix Type : Dense Graded Bituminous Macadam

Contractor : Sri H.S.Prakesh

Test Method : Specification for Road & Bridge Works, MORT&H, Revision V

Location : Venkatala Village

Sample No : 1

Date : 22-Jul-2020

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_{sb})	gm	w_{sb}	1762
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	682
4	Weight of bowl + Sample after extraction (w_{sa})	gm	w_{sa}	1729
5	Weight of Sample after extraction (i.e. washed aggregates) (S_a)	gm	$S_a = w_{sa} - Eb$	649
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	33
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	31
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	$W_a / SbX100$	4.55

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	37.50	0	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Specification for Dense graded bituminous macadam
2	26.50	185	4.63	4.63	95.38	90-100	
3	19.00	869	21.73	26.35	73.65	71-95	
4	13.20	735	18.38	44.73	55.28	56-80	
5	4.75	684	17.10	61.83	38.18	38-54	
7	2.36	361	9.03	70.85	29.15	28-42	
7	0.30	768	19.20	90.05	9.95	(7-21)	
8	0.08	265	6.63	96.68	3.32	(2-8)	

A.E.E

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Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Test Method	IS : 73 – 1992 & Specification for Road & Bridge Works, MORT&H, Revision IV.
Grade of Bitumen	60 / 70
Location	Hot Mix Plant
Material	Bitumen
Sample No	1
Date	19-Jul-2020

Quality of Bitumen

Sl. No.	Description	Test Results	Requirement as per IS:73 - 1992
1	Penetration at 25^{0}C , 1 / 10 mm	64	60 – 70
2	Softening Point, (^{0}C)	52	45 – 55
3	Specific Gravity	1.01	Min. 0.97
4	Ductility at 27^{0}C, in cm	79	Min. 75
5	Flash Point, (^{0}C)	178	Min. 175

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Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Location	Venkatala Village
Material	Bitumen
Sample No	1
Date	24-Jul-2020

Rate of Spread of Tack Coat

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.659	1.654	1.653
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.018	0.013	0.012
6	Rate of spread (d/a)	kg / m^2	0.450	0.325	0.300
7	Average	kg / m^2	0.358		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

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Results: Rate of Spread of Prime Coat / Tack Coat is: 0.358 kg / m2

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Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Test Method	IS : 2386 (Part - 4) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Venkatala Village
Material	Coarse Aggregate
Sample No	1
Date	23-Jul-2020

Aggregate Impact Value

Sl. No.	Determination	Unit	Trails	
1	Weight of empty cylinder, w1	gm	960	960
2	Weight of container filled with Aggregate, w2	gm	1305	1310
3	Weight of the Aggregate before compaction, (w2 - w1) = w3	gm	345	350
4	Weight of the sample passing through 2.36 mm IS sieves after Impact, w4	gm	88	75
5	Weight of the sample retained on 2.36 mm IS sieve after Impact, w5	gm	257	275
6	Aggregate Impact Value (w4 / w3)x100	%	25.51	21.43
	Specified Limit	%	24	

Results: Average Aggregate Impact Value: **23.47 %**

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Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	23-Jul-2020

Aggregate Particle Shape

I.S. Sieves Size			Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)	Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63	50	0	33.9	0	-	0
50	40	0	27	0	81	0
40	25	0	19.5	0	58.5	0
31.5	25	0	16.95	0	-	0
25	20	1558	13.5	238	40.5	256
20	16	1446	10.8	125	32.4	152
16	12.5	951	8.55	146	25.6	153
12.5	10	468	6.75	70	20.2	76
10	6.3	235	4.89	57	14.7	64
	SW	4658	SWf	636	SWe	701

Flakiness Index 13.65 %
Elongation Index 15.05 %
Combined Flakiness and Elongation Indices : 28.70 %

Comments: Maximum allowable Combined Flakiness and Elongation Indices for Bituminous Concrete is 35%.

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Job No: QECD/BBMP/YNK/QC-19/2019-2020/01

Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Test Method	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Hot Mix Plant
Material	Coarse Aggregates / Bitumen
Sample No	1
Date	19-Jul-2020
Type of Aggregate	Coarse Aggregate
Type of Binder	60 / 70 Grade
Percentage of Binder Used	5% by weight
Total weight of Aggregate	200 gms
Total weight of Binder	10 gms
Temperature of water bath	40^0C

Aggregate Stripping Value

Observation Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.25	3.26	96.74
2	3.33		
3	3.21		

Comments: Minimum allowable Aggregate Stripping Value for Bituminous Concrete is 95%

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Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V
Location	Venkatala Village
Material	Bituminous Concrete mix
Sample No	1
Date	24-Jul-2020

Stability of Mix

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.6	9 KN (min)
2	Marshal Flow	mm	3.3	2 – 4 mm
3	Percent of Air Voids in mix	%	5.1	3 – 6 %
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	69.5	65 – 75 %
5	Density	g/cc	2.22	2.22 g/cc

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Test Report

Project Name	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
Client	The Asst Executive Engineer, Yelahanka Sub Division
Mix Type	Bituminous Concrete (BC)
Contractor	Sri.H.S.Prakesh
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Venkatala Village
Material	Bituminous Concrete mix
Sample No	1
Date	24-Jul-2020

Binder Content and Mix Gradation

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1869
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	789
4	Weight of bowl + Sample after extraction (w_s)	gm	w_{sa}	1836
5	Weight of Sample after extraction (i.e. washed aggregates)	gm	$S_a = w_{sa} - Eb$	756
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	42
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	40
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	$W_a / SbX100$	5.07

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19.00	0	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Grade II Specification for Bituminous Concrete
2	13.20	678	16.95	16.95	83.15	72-100	
3	9.50	432	10.80	27.75	72.40	70-88	
4	4.75	264	6.60	34.35	65.83	53-71	
5	2.36	489	12.23	46.58	53.88	42-58	
6	1.18	345	8.63	55.20	45.35	34-48	
7	0.60	468	11.70	66.90	34.40	26-38	
8	0.30	411	10.28	77.18	23.75	18-28	
9	0.15	365	9.13	86.30	14.25	12-20	
10		365	9.13	95.43	5.15	(4-10)	

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Job No.: QECD/BBMP/YNK/QC-19/2019-2020/01

PRECAST SLAB 100mm Thick(CORE) TEST REPORT

Client	:	**The Asst Executive Engineer, Yelahanka Sub Division**
Contractor	:	**Sri.H.S.Prakesh**
Name of Work	:	Asphalting to Road from N.H Road towards Kerekodi Road, Main Road and Cross Roads at Venkatala Village in Ward No-01 of Yelahanka Sub Division.
No.of Sample Tested	:	01
Date of Testing	:	29.06.2020
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M15

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	94.00	0.465	2519.39	1.88	0.960	24.10	12.27	13.26	12.73	15.91
2	50.00	95.00	0.488	2616.17	1.90	0.960	25.61	13.04	14.09	13.52	16.90
3	50.00	91.00	0.451	2524.09	1.82	0.960	24.88	12.67	13.68	13.14	16.42

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